

Chapter 11: Transportation Element

11.1 Vision Statement

“The Transportation Element of the Comprehensive Plan serves to identify the existing transportation facilities; evaluate the area’s potential for growth, development, or redevelopment; and project the future transportation enhancements needed to meet demand.”

Transportation is an integral building block the physical environment. The movement of goods and services is the basis of a local economy. Transportation facilities also provide ways for individuals to travel for employment, education, and leisure. When transportation is mentioned, most people think of roads, highways and bridges. However, transportation is an all-encompassing network that includes rail, water, air, pedestrian, transit, and automobile infrastructure. This element provides an overview of Greenwood County’s transportation facilities, and seeks to identify the changes affecting these facilities in order to identify the policies that will guide growth for the next 20 years.

11.2 Background

Greenwood County is experiencing growth in numerous sectors of the community. Related to each of these sectors is the transportation network and its ability to move people and goods efficiently in a given area. From the early history of Greenwood County, transportation, specifically roads and rails, dramatically changed the rural lifestyle of western South Carolina. Greenwood was once the hub of four railroads that served the community making it the economic center of the region. As rail service was consolidated, routes were reduced in the area and more goods were shipped by truck. The road and highway network then provided the primary link to other markets such as Greenville, Columbia and Augusta.

The highway network will always be an important aspect of the local transportation network. As growth continues in the region, the County should expect greater loads on its rail network as well as growing pressure for alternative transportation facilities beyond traditional road construction.

11.3 Roads and Highways

Roads and highways are the main building blocks of our mobile civilization. Analysis of the form of our cities and towns in the United States shows the importance these facilities play as the backbone of our local communities. These roadways serve employment centers, commercial businesses and high density residential developments.

Greenwood County is the regional center of the Upper Savannah Region. As such, many of the roadways converge to the county seat of the City of Greenwood. This convergence of numerous roadways provides opportunities as well as requires responsibilities. Local governments, the South Carolina Department of Transportation, and the regional council of governments must work cooperatively for the current and future needs of our transportation system.

Ownership and maintenance of roads is a major concern in Greenwood County. Basically, roads are maintained by a number of groups: the state, the county, the city, the town, a person or persons, or a community association. Overall, there are standards and procedures that must be met to plan, construct, and ultimately build a road that is sufficient to handle the weight of various types and volumes of vehicles in a given day. Roads are built for different purposes. A highway will have many weights of vehicles that it must carry, while a driveway has but three: auto, pedestrian, and bicycle. In Greenwood County, the local governments set roadway standards that must be adhered to. The standards are continuously evaluated to ensure that they meet the needs of the communities as well as federal and state recommendations from transportation engineering associations. Specifically, these standards should address the type, purpose and the projected usage of the roadway. As well, pedestrian and bicycle standards should be incorporated into the roadway design.

The improvement of dirt roads to paved roads is an issue of concern within the County. There are currently 109 miles of unpaved roads that are publicly maintained by Greenwood County. The constant maintenance of these roads through scraping and replacement of stone is an annual cost that is included in the County's annual budget. However, no annual funds are utilized for the paving of dirt roads. In 2010, Greenwood County budgeted \$100,000, which includes maintenance of the roadway and roadside vegetation control for the unpaved system. A solution to this ongoing maintenance issue is a work schedule for the long-term goal for the paving of these roads. By allocating funds over a number of years, the burden for paying for these roadways would be minimized. Under the following example, Greenwood County could have all public roads paved by 2035 at an estimated cost per year of \$3.27 million.

Figure 11-1: Cost Estimate of Road Paving

Completion Date	Miles of Unpaved Road (2010)	Cost per Mile (2010)	Total Cost	Cost Per Year
2020	109	\$750,000	\$81,750,000	\$8,175,000
2025	109	\$750,000	\$81,750,000	\$5,450,000
2030	109	\$750,000	\$81,750,000	\$4,087,500
2035	109	\$750,000	\$81,750,000	\$3,270,000

Source: Greenwood City/County Planning, 2010

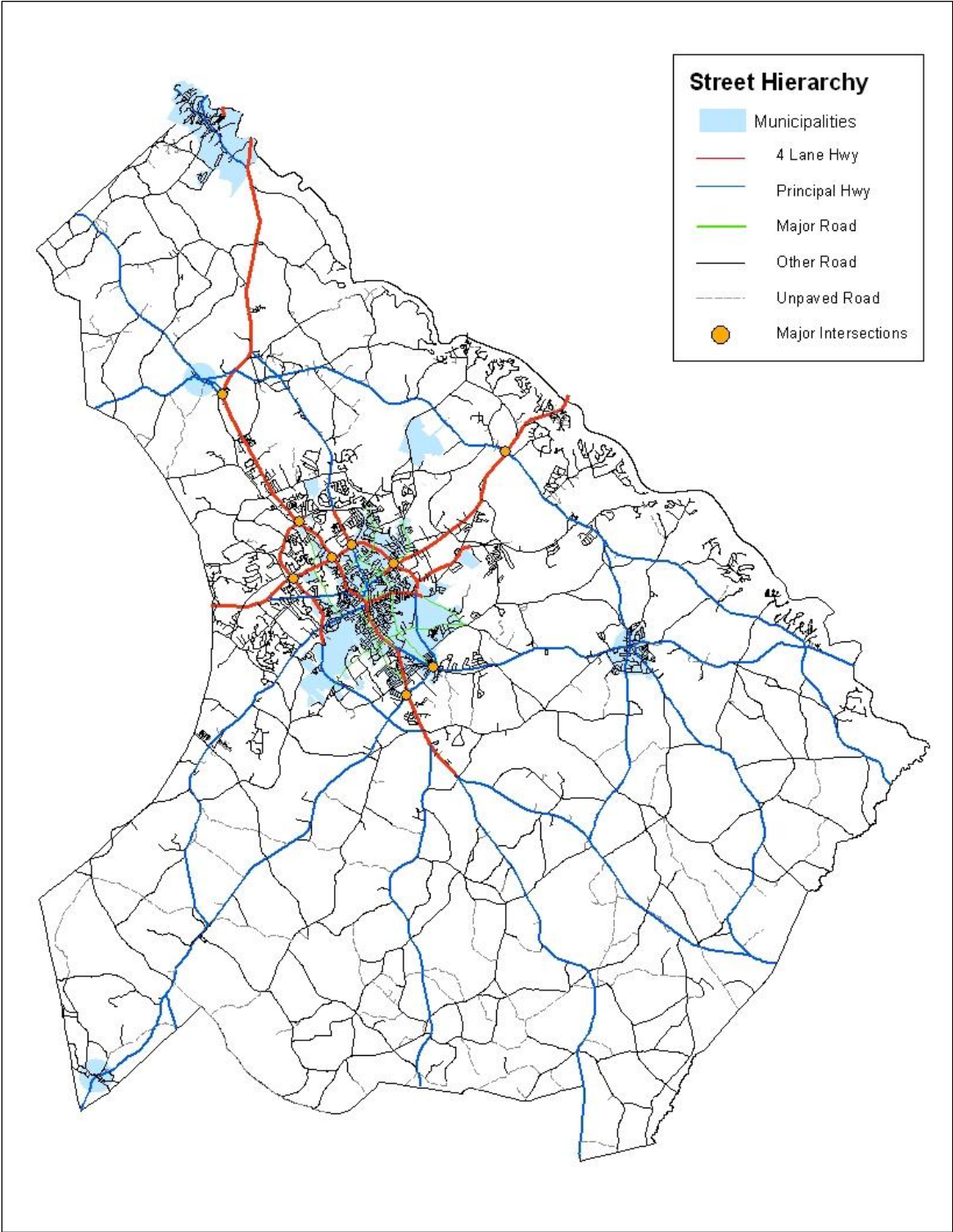
In order to understand the dynamics of our roadways, a hierarchy of roads is needed. The road network can be broken up into three categories: arterials, collectors and local streets. *Arterials* serve primarily to move traffic between principal traffic generators. Residential access is discouraged, but commercial access is allowed. Arterials should also form an integrated system. *Collectors* serve internal traffic movements within an urban area and connect it with the arterial system. They meet movement and access functions equally. Lastly, *local streets* provide access to adjacent land as their primary function. They may be designed as grids, loops, or cul-de-sacs. Currently, there are 55.4 miles of major arterials and 79.1 miles of minor arterials within Greenwood County (See Figure 11-2). These constitute the state and federal highways that are utilized most frequently and have a high traffic volume.

The street hierarchy shows roads with higher traffic volumes. Thus, these are the most popular roads to use for travel purposes. In Greenwood County, most of the arterial roads radiate out from the City of Greenwood. The goal of highway planning is to ensure that an adequate mixture of differing types of roads are within a close proximity. Areas north of the City of Greenwood show immediate needs for additional arterials and collectors. As this is the most populated area of the county, additional highway improvements will be needed north of Highway 72 West and Highway 34 East. Within the City of Greenwood, this "gap" is even more evident as the northeastern section of the city is disconnected by the lack of a collector road south of the airport. Future highway plans should include strategies to alleviate these problems.

Before the national highway system of the 1950s, US highways were the main routes between regions of the country. Greenwood County was noted as a thoroughfare route as US Highway 25 was constructed through the center of the county. US Highway 25, also known as the "Woodpecker Route", connected the Midwest to Florida via Greenville, Greenwood, and Augusta. Even though no interstate highways currently run through Greenwood County, Highway 25 is the most direct route from Greenville to Augusta.

US Highway 72 is a prime transportation corridor that links Greenwood County to US Interstate 26 to the east and to the State of Georgia. Four-laning of this highway was completed in 2009 for portions within Abbeville and Laurens Counties. The State of Georgia continues to work on sections between Elberton and Athens. Once completed, this highway will be four lanes from Interstate 26 to Atlanta.

Figure 11-2. Street Hierarchy



Source: Greenwood City/County Planning Department, 2010.

Future expansion of our roadway network is an issue that is vital for the long-range development and vitality of our community. Additional improvements need to be made to the overall traffic plan for Greenwood County. Local requirements for roadway construction should also include specifications for alternative transportation needs such as sidewalks, bike lanes, etc. In 2000, the SCDOT in cooperation with the Federal Highway Administration and Greenwood County developed a thoroughfare plan that outlined roadway needs through 2020. This plan identified twelve projects for consideration.

Figure 11-3. Proposed Highway Projects

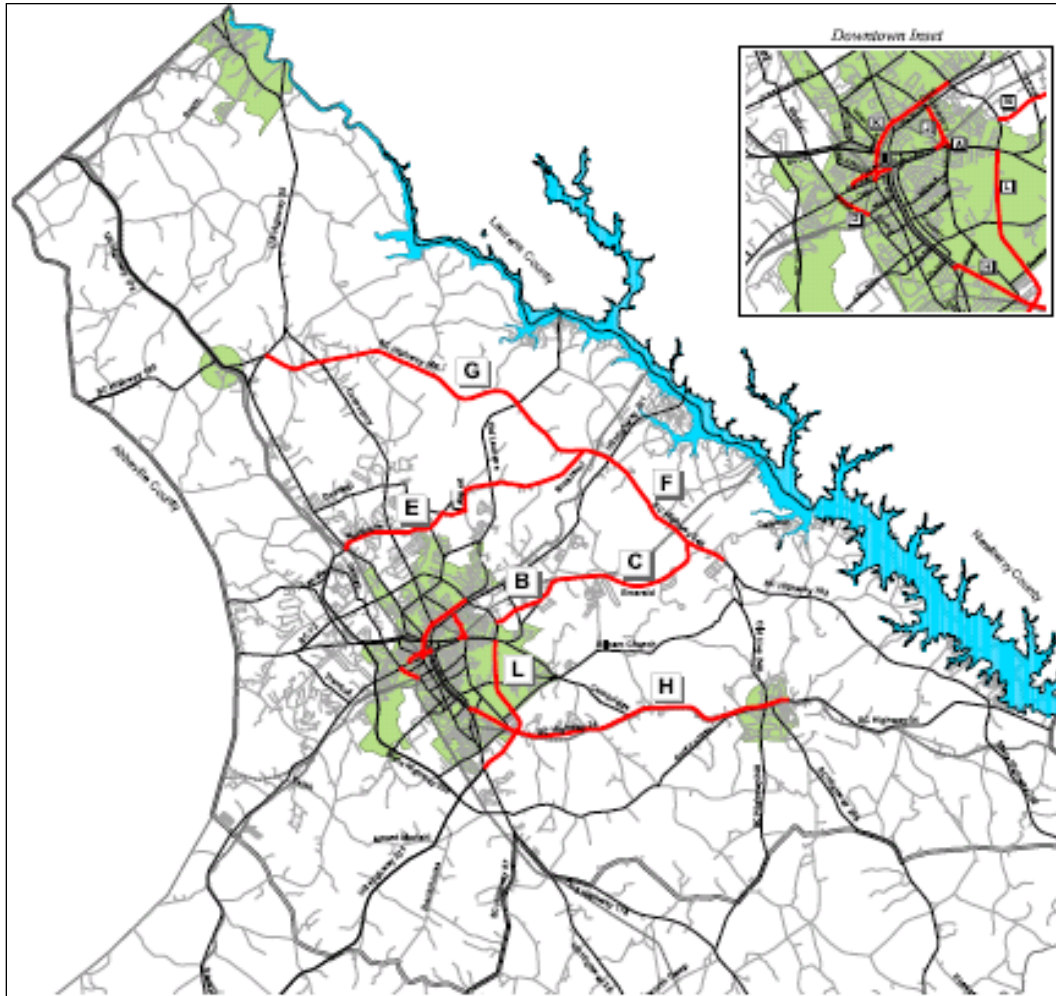
	Project Name	Project Description	Project Status
A	Cokesbury/New Market Link	Construct a new facility from Cokesbury Road to New Market Street	
B	Emerald Road – Phase I	Widen to five lanes from US 25 to Empire Circle	Completion Date – 2007
C	Emerald Road – Phase II	Widen to five lanes from Empire Road to SC 246	
D	Mathis/Spring Connector	Construct a new facility from Maxwell Avenue to Marion Street	
E	Northside Drive	Widen to five lanes from US 25 to Bucklevel Road	
F	SC 246 – Phase I	Widen to five lanes from Bucklevel Road to Emerald Road	
G	SC 246 – Phase II	Widen to five lanes from US 25 to Bucklevel Road	
H	SC 34	Widen to five lanes from the Town of Ninety Six to Orange Street	
I	Seaboard Connector	Construct a new facility from Seaboard to Edgefield Avenue	Infeasible due to Public Investment
J	Seaboard/Cokesbury Connector	Widen Cokesbury Street to five lanes and add connector to Seaboard Avenue; new facility from Seaboard Avenue to Edgefield Street	
K	Durst Connector	Widen to five lanes from US 25 to Cambridge Avenue and add new connector to Maxwell Avenue	
L	US 25/178 Bypass	Widen to five lanes from Cambridge Avenue to US 25	

Source: Greenwood County Thoroughfare Plan, 2000.

Recent national trends for highway construction, reconstruction and planning have fueled the need for the provision of additional funding sources for local governments. Specifically, the US Congress in 1998 passed legislation entitled TEA-21. This legislation enables local governments to apply for funds for special projects to enhance the usability of highways and develop new ways to alleviate traffic problems. Greenwood County, in coordination with other local governments, needs to apply for grant funding under this legislation. Since this program is administered by each state, Greenwood County projects would be competitively ranked against other state projects. Greenwood County also needs to evaluate the need for a grants coordinator position to develop, apply, and manage grants for the local governments.

The Greenwood County Thoroughfare Plan also identified funding mechanisms for the cost allocation of these projects. The plan identified financing a portion of this work program from the Upper Savannah Council of Government's Rural Guideshare of approximately \$6 million a year in federal transportation funds. This program allocates funds to the seven-county region based on population and impact of the project. An alternative financing option would be to implement a Special Local Option Sales Tax (LOST) which allows local governments to adopt a one-cent sales tax ordinance which is subject to a referendum. This additional funding source would be directly tied to specific roadway projects and would be eliminated when the project was completed.

Figure 11-4: Proposed Highway Project Locations



Source: Greenwood Thoroughfare Plan, 2000.

An additional transportation funding source that could be available to Greenwood County is through a Metropolitan Planning Organization (MPO). This MPO designation could be available after the 2010 Census if the population threshold is reached. In order to be designated, a county has to have a local urbanized area of 50,000 population. This designation allows Greenwood County to apply for additional sources of funds for major highway projects and planning. Therefore, Greenwood County should make every effort to obtain and validate accurate census counts in 2010 in order to become an MPO.

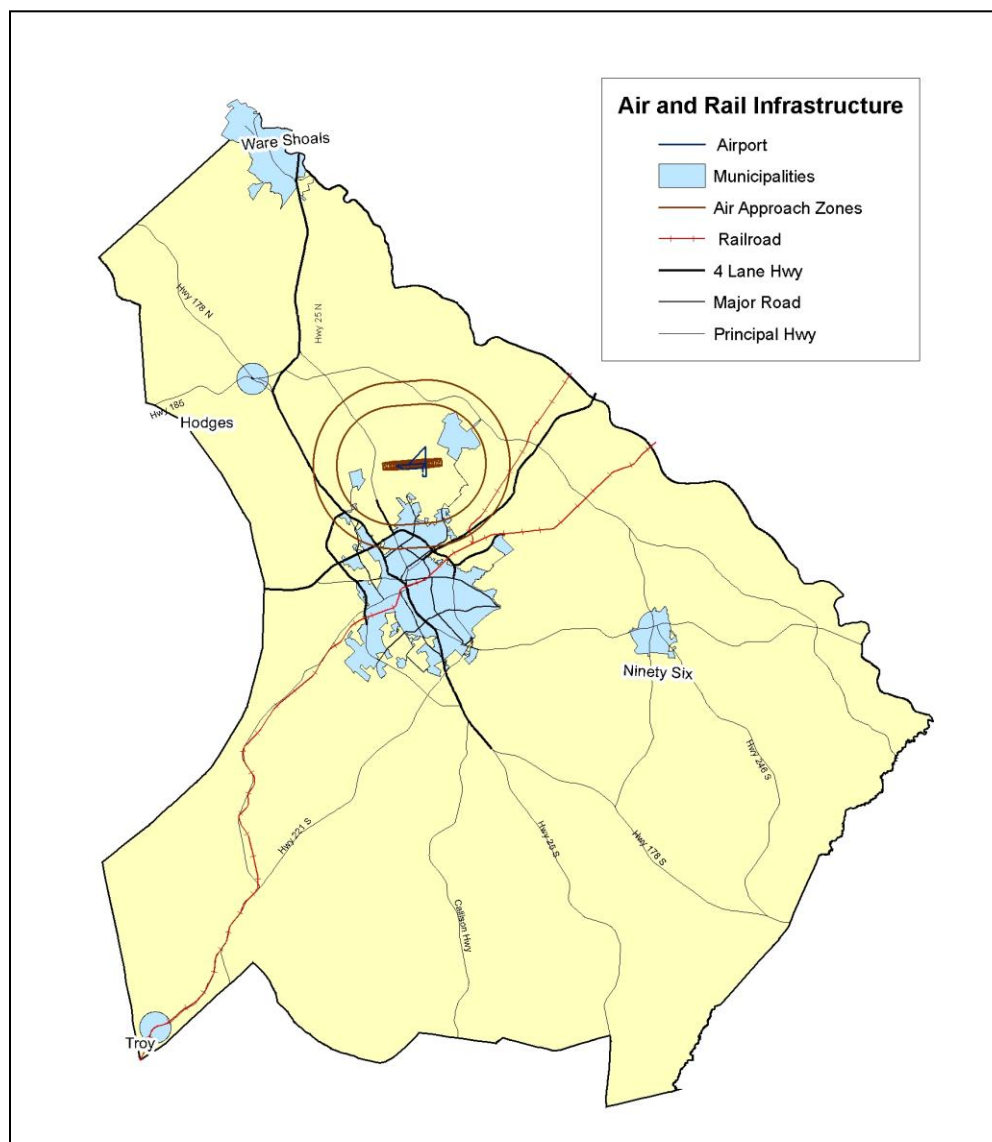
The Greenwood Thoroughfare Plan is a comprehensive overview of the needs of the community's major roadway network. Even though this plan is still valid, an update will be necessary within the next five years. Integration of 2010 Census data and new future land use proposals should be incorporated into a comprehensive transportation plan that includes other forms of transportation including pedestrian and bicycle elements.

11.4 Air Facilities

The Greenwood County Airport is a county owned facility that is maintained by the County. The airport currently has one runway with an additional airstrip that is currently inactive. The active landing strip runs in an east-west direction and the inactive runway in a northeast-southwest direction. There is potential for expansion of this site as an additional landing strip is available for future expansion. Greenwood County has developed a terminal at the site for the use of small passenger planes and administrative personnel.

Airline deregulation and the expansion of many adjacent metropolitan airports have undermined the ability of the Greenwood County Airport to provide large-scale passenger service. However, with the local economies in the Greenville/Spartanburg, Columbia, and Augusta metropolitan areas increasing, the ability for Greenwood to serve as an air freight hub increases. With local access to these markets, the Greenwood County Airport will need to expand the landing strips and construct additional hanger space for lease purposes. A major concern for this projected economic development is the need for an Instrument Landing System (ILS) or GPS precision approach that provides data to planes as they land in inclement weather conditions or at night. In order to accommodate larger planes, weather frequency communications need to be installed. Land use decisions in a one-mile radius of the airport need to be governed by the need of future expansion of the airport and the increased noise from airplanes during takeoff and landing. As operations increase, there may be a need to explore the hiring of a full-time airport director to supervise the operation and maintenance of the facility while determining sources of grant funds for upgrades to the facility.

Figure 11-5. Air and Rail Infrastructure



Source: Greenwood County Planning Department, 2010.

11.5 Rail Service

Greenwood County is served by rail lines maintained by CSX Corporation. This rail system provides rail freight transportation over a network of 21,000 route miles in 23 states in the East, Midwest and South and in Ontario and Quebec. Locally, Greenwood is the site of the Maxwell Yard – one of five freight classification yards in South Carolina. The Maxwell Yard is located southwest of the intersection of SC Highway 10 and SC Highway 225 Bypass just west of the city limits of Greenwood. Additional land in the area should be utilized for expansion of this freight yard.

The railroad system runs primarily on a northeast-southwest axis through Greenwood County, the City of Greenwood, and the Town of Troy (See Figure 11-5). This route provides rail service to Augusta, Greenville, Spartanburg, and Columbia and is a major contributor to the local economy. CSX currently provides service to twelve customers in Greenwood County with an annual average of 1,500 car loads of materials handled through these customers. This amounts to about \$3.6 million per year. Potential rail access in Greenwood County is available along SC Highway 10 near Troy and SC Highway 246 near Coronaca.

The potential for rail freight is tremendous as technology has advanced for efficient locomotives. Global Insight, a transportation database network and policy agency, recently reported that railroads can carry one ton of freight 457 miles on a single gallon of fuel compared to 123 miles per gallon for trucks carrying the same load. A recent publication by CSX notes that one train can carry the load of more than 280 trucks. The potential for enhancements to the rail network will make the transportation of large goods over great distance even more economical and reduce the amount of truck traffic on major roadways.

Rail service poses potential conflicts with automobile traffic at grade crossings. A recent study found that there are 30 public and 17 private crossings in Greenwood County. Of these crossings, only 16% had signs, lights and gates installed to prevent train-automobile collisions. Cooperation between local highway departments and CSX Corporation can minimize the potential danger at these crossings.

Passenger rail service is currently unavailable from Greenwood County. The closest Amtrak stations are located in Greenville and Columbia. Direct road networks linking Greenwood to other metropolitan areas have alleviated the need for passenger service. High speed rail is gaining as a transportation option in the United States. However, the potential for high speed rail access in Greenwood County is small as the Greenville/Spartanburg area has the most potential for rail corridor access between Charlotte and Atlanta.

11.6 Public Transit

Public transit has always been a popular topic in Greenwood County as Greenwood is the largest city in South Carolina without a public transit system. Just as in many other communities, this topic stalls when questions are asked as to why it is needed, who will use it and who will pay for the service. Current and projected population statistics for the county and municipalities do not meet typical characteristics for justification of a public transit system. However, public transit in the next twenty years may be more suitable for a small-scale ridership program, similar to those made available by the Piedmont Agency on Aging and the Emerald Center. The only available transportation service is provided by two private taxi services that are licensed from the City of Greenwood.

The Dial-a-Ride program is another such example of a small-scale transit system. These models are based on the idea that small vans will be available on certain days and at certain times to pick up individuals in need of transportation. Similar systems can be found in smaller communities with a high aged population. This type of transit system needs to be explored in greater detail within the next five years to determine the needs of the community. Financing, transit routes, maintenance of fleet vehicles and cooperative ventures need to be attributed to this study.

11.7 Water Transportation

Greenwood County's major water body is Lake Greenwood which is served by the Saluda and Reedy Rivers. Due to the construction of the Buzzard Roost Hydroelectric Dam and the Ware Shoals Dam, travel is limited along this stretch of river between Lake Murray to the southeast and Greenville County to the northwest. However, recreational usage is an option for canoes and kayaks along the stretch. Additional public boat ramps and docks are necessary to accommodate the usage of the lake and river as

a blueway; a blueway is similar to a greenway where there is a designated pathway or corridor for the travel of individuals on water.

Since Lake Greenwood is a major asset to Greenwood County and the lake has multiple uses that are comprehensive in nature, Greenwood County needs to develop a long-range plan that identifies long-range uses for the lake and proposed future improvements to enhance the usage and accessibility of the waterbody.

11.8 Pedestrian and Bicycle Facilities

One area of transportation need that has not traditionally been met is pedestrian and bicyclist infrastructure. The Greenwood Pedestrian and Bicycle Facilities Plan was first conducted in the late 1990s. This plan outlined existing facilities and determined future needs for infrastructure development. This plan needs to be updated to provide more opportunities for these modes of travel.

Research has shown that citizens will utilize facilities for pedestrians and bicyclists if they are built in areas that have a high population density; designed separately from automobile infrastructure; connect with high traffic retail, employment, educational or recreation centers; and provide a safe and attractive environment to the user. By encouraging individuals to walk or ride a bicycle, cars are removed from the roadway, vehicle volume is reduced, accident rates are reduced, and carbon dioxide (CO₂) emissions are reduced. Encouraging the use of walking and bicycling also increases the overall health of the population for added wellness benefits to the community.

11.9 Alternative Transportation

There has been much discussion in recent years concerning the use of alternative vehicles. The term has many uses and for this discussion we will refer to the use of vehicles such as golf carts and other such transportation modes that provide the effective transport of individuals from one place to another that do not utilize gasoline or that do not utilize the traditional mode of travel on roadways. This can include future technologies that provide an alternative form of travel. Specifically, the use of golf carts for general transportation has increased exponentially since 2000. Alternative vehicles such as golf carts provide for a slower, yet energy efficient form of movement. Due to their slow pace and lack of passenger safety requirements, golf carts are not permitted on many roadways in South Carolina. As the popularity of this mode of transportation grows, Greenwood County should periodically evaluate the need for additional standards for operation of these vehicles and the provision of special lanes or separate infrastructure that serves to provide an additional form of movement, thus reducing vehicle miles on major roadways.

11.10 Future Transportation Needs

As the Greenwood area grows, additional focus needs to be placed on moving people as effectively and efficiently as possible. A future transportation option that should be evaluated is a light rail system or trolley line that provides functional movement of individuals between areas of Greenwood with the highest population densities. Specifically, a transit line that travels from Self Regional Healthcare on South Main Street to the Greenwood Mall on Montague Avenue that utilizes the abandoned railroad right-of-way and existing roadway would provide opportunities for individuals to rely less on their personal vehicle and for businesses to reduce the parking area that is required for their customers. This public facility would be an investment in the Uptown area that would benefit the entire community. A feasibility study would need to be conducted to ensure that the system is cost effective to the benefit it would provide. It is estimated that population densities within the City of Greenwood's core (*i.e.* within the Highway 25/225 Bypass) would need to increase by as much as 25% of 2010 levels in order to meet the threshold for feasibility for this type of system.

11.11 Conclusion

Greenwood County is home to a transportation system with many opportunities. A major component of capital facilities, the transportation network is a key component of a functional community. The future of the County is dependent upon the location of these facilities, ensuring land uses are placed within proximity to these facilities and the current system is able to handle future needs. As the County develops over the next twenty years, Greenwood County should be proactive in planning for the future needs of the transportation network.



Goals, Objectives, and Strategies for Implementation

Goals/Objectives/Strategies	Accountable Agency	Time Frame
Goal 11.1. – Develop Plans to Aid in Decision-making		
Objective 11.1.1. Plan for future transportation needs		
<u>Strategy 11.1.1.1.</u> Develop a Comprehensive Transportation Plan with the emphasis on multi-modal transportation options	Local Governments, SCDOT, Upper Savannah Council of Governments (USCOG)	2014
<u>Strategy 11.1.1.2.</u> Evaluate options for usage and incorporation of alternative vehicles such as golf carts into the transportation network	Greenwood County and City of Greenwood	2012
<u>Strategy 11.1.1.3.</u> Develop a feasibility study and cost-benefit analysis to explore options for a light rail/trolley line for Greenwood	City of Greenwood and Greenwood County	2020
<u>Strategy 11.1.1.4.</u> Conduct a long-range transit study	Local Governments, SCDOT, USCOG	2014
<u>Strategy 11.1.1.5.</u> Develop a long-range Lake Management Plan to promote usage and accessibility of the waterbody	Greenwood County, Property Owners	2013
Goal 11.2. – Provide Adequate Infrastructure Based on Population Levels		
Objective 11.2.1. Make improvements to the Greenwood County Airport		
<u>Strategy 11.2.1.1.</u> Provide basic upgrades to the Airport for regional freight	Local Governments, Partnership Alliance	On-going
<u>Strategy 11.2.1.2.</u> Provide an Instrument Land System (ILS) or GPS precision approach at the Greenwood County Airport	Greenwood County	On-going
<u>Strategy 11.2.1.3.</u> Install weather frequency communications at the Greenwood County Airport	Greenwood County	On-going
Objective 11.2.2. Evaluate existing transportation requirements		
<u>Strategy 11.2.2.1.</u> Evaluate roadway design standards to determine if modifications are needed to reflect changes in the industry	Planning Commission	On-going
<u>Strategy 11.2.2.2.</u> Incorporate pedestrian and bicycle infrastructure requirements into city and county development standards	Planning Commission	2014
Objective 11.2.3. Develop additional transportation facilities		
<u>Strategy 11.2.3.1.</u> Provide east-west linkages south of the Airport and Uptown	Local Governments, SCDOT, USCOG	On-going
<u>Strategy 11.2.3.2.</u> Target road improvements north of Highway 72 West and Highway 34 East	Local Governments, SCDOT, USCOG	On-going
<u>Strategy 11.2.3.3.</u> Implement the 2000 Greenwood County Thoroughfare Plan	Local Governments, SCDOT, USCOG	On-going
<u>Strategy 11.2.3.4.</u> Apply for TEA-21 funds for transportation improvements	Local Governments	On-going
<u>Strategy 11.2.3.5.</u> Implement a Special Local Option Sales Tax (LOST) to implement county-wide transportation improvements	Local Governments	2012
<u>Strategy 11.1.3.7.</u> Develop pedestrian and bicycle linkages to public facilities in coordination with the County Parks and Greenway Plan	Local Governments, SCDOT	On-going
<u>Strategy</u> Provide options along Lake Greenwood to encourage the recreational usage of canoes and kayaks through the promotion of a blueway trail	Greenwood County	2014
Goal 11.3. – Promote a Safe Community		
Objective 11.3.1. Partner with other agencies		
<u>Strategy 11.3.1.1.</u> Coordinate transportation planning efforts	Local Governments, SCDOT, USCOG	On-going
Objective 11.3.2. Promote rail safety		
<u>Strategy 11.3.2.1.</u> Cooperate with CSX and SCDOT to minimize rail-auto collisions	Greenwood County, SCDOT, CSX	On-going
<u>Strategy 11.3.2.2.</u> Provide alternative access to residential areas with sole access rail lines	Greenwood County, SCDOT, CSX	On-going

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